

WHAT IS CLAIMED IS:

1. A cathode ray tube, comprising:
 - a front panel;
 - a fluorescent screen formed on an interior surface of the panel;
 - a funnel fastened to the panel, the funnel including a neck part and a screen part opposing the neck part, wherein the screen part is fastened to the panel;
 - an electron gun coupled to the neck part for emitting electron beams, the electron beams formed of a plurality of electrons;
 - a deflection yoke for deflecting electrons within the electron beams in horizontal and vertical directions, wherein the deflection yoke includes horizontal deflection coils for horizontally deflecting electrons within the electron beams and vertical deflection coils for vertically deflecting electrons within the electron beams, wherein a portion of at least one of the horizontal and vertical deflection coils proximate the screen part has a roughly rectangular cross section;
 - a holder for holding and insulating the horizontal and vertical deflection coils; and
 - a ferrite core exterior of the vertical deflection coils, wherein a cross section of a portion of the ferrite core proximate the screen part includes diagonal regions, horizontal regions, and vertical regions, wherein a thickness of the diagonal regions is less than thicknesses of the horizontal and vertical regions.
2. The cathode ray tube according to claim 1, wherein a cross section of a portion of the holder proximate the screen part is rectangular.

3. The cathode ray tube according to claim 1, wherein an interior surface of the funnel has a cross section, perpendicular to the axis of the funnel, that gradually changes from a substantially circular shape at the neck part to a substantially non-circular shape at the screen part.

4. The cathode ray tube according to claim 3, wherein an exterior surface of the funnel has a cross section, perpendicular to the axis of the funnel, that gradually changes from a substantially circular shape at the neck part to a substantially non-circular shape at the screen part.

5. The cathode ray tube according to claim 1, wherein an exterior surface of the funnel has a cross section, perpendicular to the axis of the funnel, that gradually changes from a substantially circular shape at the neck part to a substantially non-circular shape at the screen part.

6. The cathode ray tube according to claim 1, wherein the thickness of the diagonal regions of the cross section at the screen portion of the ferrite core is about 1.5mm to about 6mm.

7. The cathode ray tube according to claim 1, wherein the thickness of the horizontal regions of the cross section at the screen portion of the ferrite core is about 4mm to about 8mm.

8. The cathode ray tube according to claim 1, wherein the thickness of the vertical regions of the cross section at the screen portion of the ferrite core is about 4mm to about 8mm.

9. The cathode ray tube according to claim 1, wherein a cross section of a portion of the horizontal deflection coils proximate the screen part is rectangular.

10. The cathode ray tube according to claim 1, wherein a cross section of a portion of the vertical deflection coils proximate the screen part is substantially circular.

11. The cathode ray tube according to claim 1, wherein a cross section of a portion of the vertical deflection coils proximate the screen part is rectangular.

12. The cathode ray tube according to claim 1, wherein an exterior cross section of a portion of the ferrite core proximate the neck part is substantially circular.

13. The cathode ray tube according to claim 1, wherein an interior cross section of a portion of the ferrite core proximate the neck part is substantially circular.

14. The cathode ray tube according to claim 1, wherein an interior cross section of a portion of the ferrite core proximate the screen part is non-circular.

15. The cathode ray tube according to claim 14, wherein the interior cross section of the portion of the ferrite core proximate the screen part is rectangular.

16. The cathode ray tube according to claim 1, wherein an exterior cross section of a portion of the ferrite core proximate the screen part is substantially circular.

17. A cathode ray tube, comprising:

a front panel;

a fluorescent screen formed on an interior surface of the panel;

a funnel fastened to the panel, the funnel including a neck part and a screen part opposing the neck part, wherein the screen part is fastened to the panel;

an electron gun coupled to the neck part for emitting electron beams, the electron beams formed of a plurality of electrons;

a deflection yoke for deflecting electrons within the electron beams in horizontal and vertical directions, wherein the deflection yoke includes horizontal deflection coils for horizontally deflecting electrons within the electron beams and vertical deflection coils for vertically deflecting electrons within the electron beams, wherein a portion of at least one of the horizontal and vertical deflection coils proximate the screen part has a roughly rectangular cross section;

a holder for holding and insulating the horizontal and vertical deflection coils; and

a ferrite core exterior of the vertical deflection coils, wherein an exterior cross section of a portion of the ferrite core proximate the neck part is substantially circular, wherein an interior cross section of the portion of the ferrite core proximate the neck part is substantially circular, wherein an exterior cross section of the ferrite core proximate the screen part is substantially circular, wherein an interior cross section of the ferrite core proximate the screen part is non-circular, wherein the interior cross section of the ferrite core proximate the screen part includes a diagonally arranged curvature, a horizontally arranged curvature, and a

vertically arranged curvature, wherein the diagonally arranged curvature has a radius that is less than a radius of the horizontally and vertically arranged curvatures.

18. The cathode ray tube according to claim 17, wherein the substantially circular exterior cross section of the ferrite core proximate the neck part has a radius that is less than the radius of the horizontally arranged curvature.

19. The cathode ray tube according to claim 17, wherein the substantially circular exterior cross section of the ferrite core proximate the neck part has a radius that is substantially equal to the radius of the horizontally arranged curvature.

20. The cathode ray tube according to claim 17, wherein the substantially circular exterior cross section of the ferrite core proximate the neck part has a radius that is less than the radius of the vertically arranged curvature.

21. The cathode ray tube according to claim 17, wherein the substantially circular exterior cross section of the ferrite core proximate the neck part has a radius that is substantially equal to the radius of the vertically arranged curvature.

22. The cathode ray tube according to claim 17, wherein the radius of the horizontally arranged curvature is substantially equal to the radius of the vertically arranged curvature.

23. The cathode ray tube according to claim 17, wherein the diagonally arranged curvature is arranged between about 30° and about 60° from the horizontal axis of the ferrite core.

24. A deflection yoke of a cathode ray tube, comprising:
a ferrite core having a first end, a second end opposing the first end, an interior surface, and an exterior surface, wherein a portion of the interior surface proximate the first end has a cross section that is non-circular and wherein a portion of the exterior surface proximate the first end has a cross section that is circular; and
a plurality of vertical deflection coils and a plurality of horizontal deflection coils within the ferrite core, wherein a portion of the plurality of at least one of the vertical and horizontal deflection coils proximate the first end has a cross section that is rectangular.